Volume 156 July 1985

CONTENTS

A singularity method for calculating hydrodynamic forces and particle velocities in low-Reynolds-number flows. T. Dąbroś *page* 1

Electrostatically enhanced film condensation. F. M. Joos and R. W. L. Snaddon 23

The approach to self-similarity of the solutions of the shallow-water equations representing gravity-current releases. R. E. Grundy and James W. Rottman 39

Galilean invariance of subgrid-scale stress models in the large-eddy simulation of turbulence. Charles G. Speziale 55

Numerical and asymptotic solutions for merging flow through a channel with an upstream splitter plate. H. Badr, S. C. R. Dennis, S. Bates and F. T. Smith 63

On the stability of Poiseuille–Couette flow: a bifurcation from infinity. S. J. Cowley and F. T. Smith 83

The influence of the outer bath in the dynamics of axisymmetric liquid bridges. Angel Sanz 101

On generalized vorticity-conservation laws. B. Gaffet 141

The response of Helmholtz resonators to external excitation. Part 2. Arrays of slit resonators. Peter A. Monkewitz 151

An experimental study of geometrical effects on the drag and flow field of two bluff bodies separated by a gap. Keith Koenig and Anatol Roshko 167

On the low-Rossby-number flow of a rotating fluid past a circular cylinder. Michael A. Page 205

Stability of fluid layers carrying a normal electric current. A. D. Sneyd 223

Measurements of local skin friction in a microbubble-modified turbulent boundary layer. N. K. Madavan, S. Deutsch and C. L. Merkle 237

A singular-perturbation theory of the growth of a bubble cluster in a superheated liquid. Georges L. Chahine and Han Lieh Liu 257

The stability of steep gravity waves. Part 2. Mitsuhiro Tanaka 281

Enhanced heat conduction in oscillating viscous flows within parallel-plate channels. U. H. Kurzweg 291

Laminar free convection in confined regions. M. Grae Worster and Alison M. Leitch 301

An experimental test of the theory of waves in fluid-filled deformable tubes. J. H. Gerrard 321

Diffraction by a slender ship: uniform theory for head and oblique seas. J. Martin and D. Barrie 349

On the stability of ring modes in a trailing line vortex: the upper neutral points. K. Stewartson and K. Capell 369

Near-neutral centre-modes as inviscid perturbations to a trailing line vortex. K. Stewartson and S. N. Brown 387

Mean-flow measurements in a supersonic three-dimensional turbulent boundary layer. Anthony Demetriades and Glenn McCullough 401

Wall-layer structure and drag reduction. W. G. Tiederman, T. S. Luchik and D. G. Bogard 419

Vortices incident upon a leading edge: instantaneous pressure fields. Ruhi Kaykayoglu and Donald Rockwell 439

The inertial draining of a thin fluid layer between parallel plates with a constant normal force. Part 1. Analytic solutions; inviscid and small- but finite-Reynolds-number limits. S. Weinbaum, C. J. Lawrence and Y. Kuang 463

The inertial draining of a thin fluid layer between parallel plates with a constant normal force. Part 2. Boundary layer and exact numerical solutions. C. J. Lawrence, Y. Kuang and S. Weinbaum 479

The stability of long steady three-dimensional salt fingers to long-wavelength perturbations. Judith Y. Holyer 495

Spectral and statistical properties of the equilibrium range in wind-generated gravity waves. O. M. Phillips 505

Reviews

The Earth's Magnetic Field: Its History, Origin and Planetary Perspective, by R. T. Merrill and M. W. McElhinny 532

Hydraulic Pumps and Motors, by R. P. Lambeck; *Hydraulic Valves and Controls, by J. J. Pippenger*; *Fluid Power for Industrial Use – Hydraulics, O. A. Johnson* 533

Elements of Hydrodynamic Propulsion, by J. A. Sparenberg 534

Index To Volume 156 536